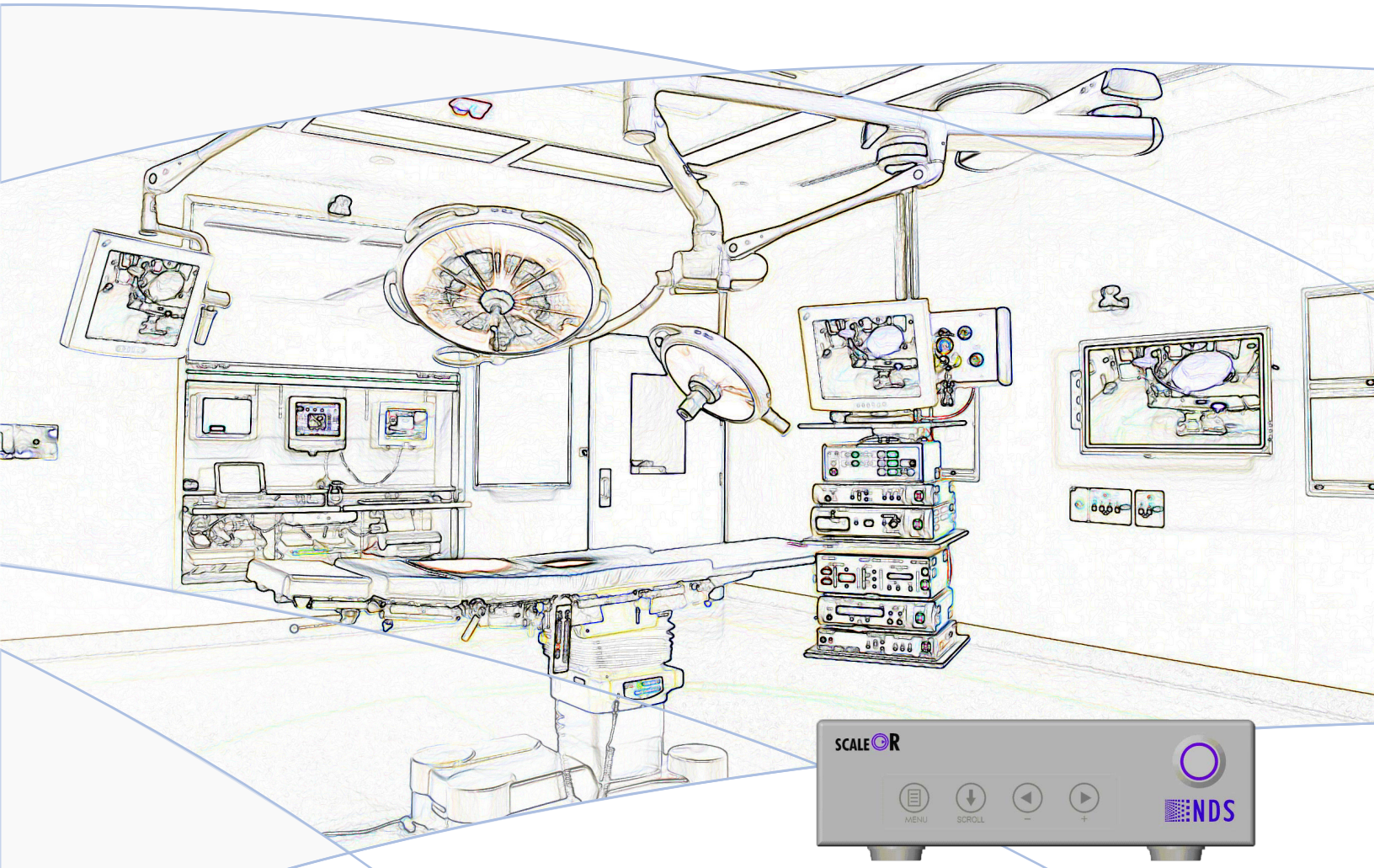
NDS
SURGICAL · IMAGING



VIDEO SCALING SYSTEM

Informatics

SCALE OR™

USER MANUAL

[ENGLISH]

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Table of Contents

Tab 1
- Safety Considerations ---------- ii
- Recycling ---------- ii
- Declaration of Conformity ---------- iii
- Legal Statement ---------- iii

Tab 2
- About This Manual ---------- 1
- Intended Use and Contraindications ---------- 1
- ScaleOR Overview ---------- 2
- General Information ---------- 2

Tab 3
- Connector Panel ---------- 3
- Output Mode Switches ---------- 3
- Electrical Symbols ---------- 3
- Output Mode Switch Settings ---------- 4
- Power Supply and Wall Adapters ---------- 5
- Removable Input Modules ---------- 6
- Module Removal and Installation ---------- 6

Tab 4
- System Configuration Example ---------- 7

Tab 5
- Startup ---------- 8

Tab 6
- Control ---------- 9
- Menu Overview ---------- 9
- ScaleOR Setup ---------- 10
  - DVI and SDI Picture Menu ---------- 10
  - Color Menu ---------- 10
  - Setup Menu ---------- 11
  - Modes Menu ---------- 12
  - Output Modes Table ---------- 13
  - Restoring Factory Defaults ---------- 13

Tab 7
- Serial Port Setup and Test ---------- 14

Tab 8
- Troubleshooting and Test Section ---------- 15

Tab 9
- Drawing and Dimensions ---------- 16

Tab 10
- Connectors and Pin Outs ---------- 17
- 3.5 mm Audio Plug Pin Out ---------- 17
- Cable Bend Radius ---------- 17

Tab 11
- Specifications ---------- 18
- Video Inputs ---------- 19
- Video Formats ---------- 19
- Cleaning Instructions ---------- 19
- Contact ---------- Back

1 CAUTION

This symbol alerts the user that important literature concerning the operation of this unit has been included. Therefore, it should be read carefully in order to avoid potential problems.

This symbol warns user that un-insulated voltage within the unit may have sufficient magnitude to cause electrical shock. Therefore, it is dangerous to make contact with any part inside the unit. To reduce the risk of electric shock, **DO NOT** remove cover (or back). ***There are no user serviceable parts inside.*** Refer servicing to qualified service personnel.

To prevent fire or shock hazards, do not expose this unit to rain or moisture. Also, do not use this unit's polarized plug with an extension cord receptacle or other outlets unless the prongs can be fully inserted. The product is designed to meet the medical safety requirements for a patient vicinity device. This device **may not** be used in connection with life support equipment.

Product Safety:
This product meets the medical safety requirements UL 60601-1 for U.S. National requirements, IEC-60601-1 International Requirement and CAN/CSA C22.2 No. 601.1 for Canadian National requirements.

North American Safety Compliance:
WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 60601-1/CAN/CSA C22.2 NO. 601.1.

Safety Compliance:
This product meets the requirements of EN 60601-1 so as to conform to the Medical Device Directive 93/42/EEC (general safety information) as amended by 2007/47/EC.

WARNING:
CLASS I LASER PRODUCT. DO NOT STARE INTO LASER BEAM

This product complies to the above standards **only** when used with the supplied medical grade power supply.
Power supply: Ault and SL Power Electronic Corp Model: MENB1030A1200C02 12VDC

This product should be powered from a center tapped circuit when used in the US at voltages over 120 volts. Product is intended for continuous operation.

This product is energized from an external electrical power source for class 1 equipment. It is the responsibility of the installer to test the unit's earth ground to verify that it complies with the hospital, local and national impedance requirements.

Recycling:

Follow local governing ordinances and recycling plans regarding the recycling or disposal of this equipment , or contact the Electronic Industries Alliance (www.eiae.org)

Declarations of Conformity

FCC and Council Directives of European Standards:

This device complies with Part 15 of FCC rules and 93/42/EEC of the Council Directives of European Standards Directive as amended by 2007/47/EC. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable results.

1. Use the specified cables with this device so as not to interfere with radio and television reception. Use of other cables and / or adapters may cause interference with other electronic equipment.
2. This equipment has been tested and found to comply with the limits pursuant to FCC part 15 and CISPR 11. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

IEC:

This equipment has been tested and found to comply with the limits for medical devices to the IEC 60601-1-2. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity.

FCC, Council Directives of European Standards and IEC:

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician for help.

Accessory equipment connected to this product must be certified according to the respective IEC Standards (i.e., IEC 60950-1) for data processing equipment and IEC 60601-1 for medical equipment). Furthermore, all configurations shall comply with the system standard, IEC 60601-1-1. Anyone who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore responsible that the system complies with the requirements of system standard IEC 60601-1-1. Whoever is responsible for securing the unit to a system needs to insure that the mounting equipment used with this product complies to IEC standard 60601-1. If in doubt, consult the technical services department or your local representative.

Legal Statement

NDS sells its products through other medical device manufacturers, distributors and resellers and therefore, purchasers of this NDS product should consult with the entity through which this product was originally purchased regarding the terms of any applicable product warranties provided by such entity, if any.

NDS neither assumes nor authorizes any person to assume for it any other liabilities in conjunction with and/or related to the sale and/or use of its products. To ensure proper use, handling and care of NDS products, customers should consult the product specific literature, instruction manual, and/or labeling included with the product or otherwise available.

Customers are cautioned that system configuration, software, the application, customer data and operator control of the system, among other factors, affect the product's performance. While NDS products are considered to be compatible with many systems, specific functional implementation by customers may vary. Therefore, suitability of a product for a specific purpose or application must be determined by the consumer and is not warranted by NDS.

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About This Manual

2

This manual is designed to assist the user with installation, setup and operation of the **ScaleOR** and its associated displays. A list of displays that may be used with the **ScaleOR** is in the Compatible Displays section under General Information on the following page.

A blue numbered tab on the side of the page denotes the beginning of a section.

The functional descriptions in this manual are representative of:
Firmware: 58J0079 Rev A and later.

Manual Part Number 60G0453 Rev B

Part Number	Input Module	Fiber Optic Output?	Audio Feature?
90T0009	DVI	No	No
90T0010	DVI	Single Fiber	No
90T0011	SDI	No	No
90T0012	SDI	Single Fiber	No
90T0013	VGA	No	No
90T0014	VGA	Single Fiber	No
90T0015	S-Video / Composite	No	No
90T0016	S-Video / Composite	Single Fiber	No

Intended Use and Contraindications

Intended Use:
This device is intended for use in a medical environment to deliver high quality video and graphic images.

Contraindications:
This device may not be used in the presence of flammable anesthetics mixture with air, oxygen or nitrous oxide. Also, it is not intended for life support applications.

Warning:
Because invisible laser radiation may be emitted from the aperture of the port when no fiber cable is connected, avoid exposure to laser radiation and do not stare into open apertures.

Condition	**Possible Cause**	**Mitigation**
End user cannot view the video data from a connected video source	Incompatibility with video source equipment.	When video source equipment is connected to the **ScaleOR**, the end user must verify that video is passed from the video source through the **ScaleOR** and is displayed correctly on the connected monitors .
External control failure	RS-232 communication failure.	Control unit from front panel keypad.
ScaleOR cannot be powered on.	Defective external power supply	Bypass the **ScaleOR** by connecting the output of the video source directly to a monitor.

For mission critical applications, we strongly recommend that a replacement unit be immediately available.

ScaleOR Overview

The **ScaleOR** accepts 1 of 4 input modules. the input modules are:
DVI-D
SDI
VGA
S-Video / Composite

The drawing on page 3 shows location of the fixed output connectors and the input module.

The output mode (resolution) may be selected using the DIP switches located on the bottom of the **ScaleOR** (see Output Mode Switch Settings table on page 4).

General Information

Installation:

ScaleOR units may be stacked on a equipment carrier, a surgical cart or mounted in a standard 19" rack. Ensure that the air vents are not blocked.

Power Supply:

The provided power supply, Ault and SL Power Electronic Corp Model: MENB1030A1200C02 12VDC, includes 4 interchangeable wall plug adapters. Drawings of the power supply, its adapters, and adapter installation information are on page 5.

Compatible Displays:

1. HD displays with a DVI input.
2. HD displays with HD-SDI or 3G-SDI input.
3. HD displays with Fiber Optic input. **Note**: The **ScaleOR**'s Fiber Optic output is an optional feature.

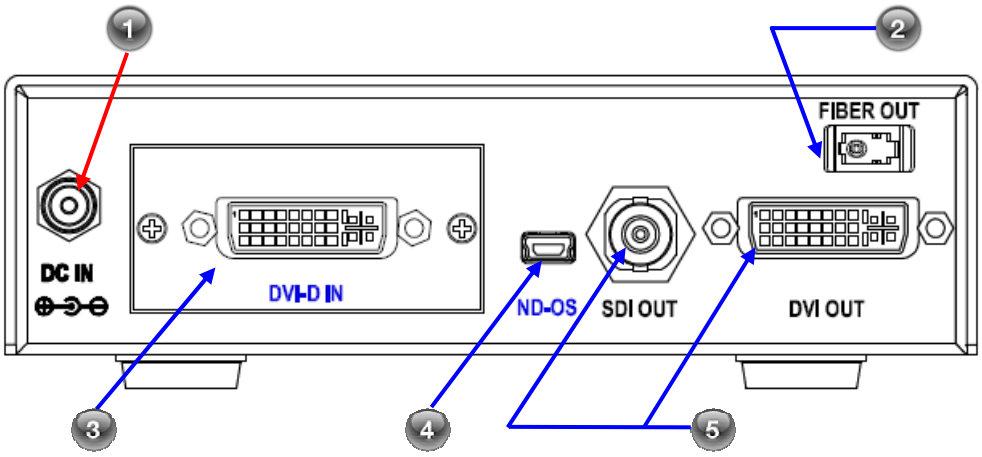
Control Options:

The **ScaleOR** may be controlled from:

1. The keypad on the front of the **ScaleOR.** Using the keypad requires that the **ScaleOR** be connected to a display.
2. A PC via the ND-OS port. See Serial Port Setup and Test on page 13.

The NDS Unified Serial Commands (P/N 60A0156) document contains a complete set of serial commands for the **ScaleOR**. Please contact your NDS sales representative for details.

Connector Panel

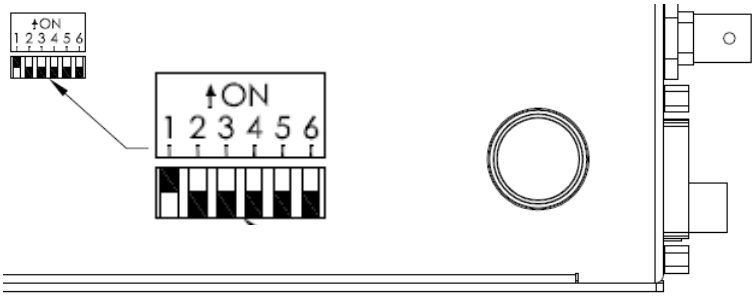


Notes:

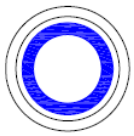
1. Power input, use the provided 12VDC power supply only.
2. Optional Fiber Optic output
3. Input module, DVI-D module shown, all input modules are shown on page 6.
4. The ND-OS connector allows the **ScaleOR** to be controlled remotely via serial commands. It is also used to install BIOS upgrades.
5. SDI and DVI video outputs.

Output Mode Switches

The **Output Mode Switches**, accessible on the underside of the unit, allow the user to select 1 of 46 output modes. The Output Mode Switch Settings table on the following page shows the switch settings required to select a given output mode. Setting the output mode from the On Screen Menu (OSM) requires that all switches be set to off.



Electrical Symbols



Power Switch:
The power switch is push on / push off. When the switch is off the ring around the center portion is white. When the switch is on, the center portion is depressed and the ring is illuminated blue. The illustration shows the switch in its **ON** state. When the **ScaleOR** is turned on the blue ring flashes at the rate of 5 flashes per second for 15 seconds then, becomes steady if a video signal is detected. If a video signal is not detected the ring continues flashing at the rate of 1 flash per second.

Output Mode Switch Settings

Legend: **F** = Off, **O** = On

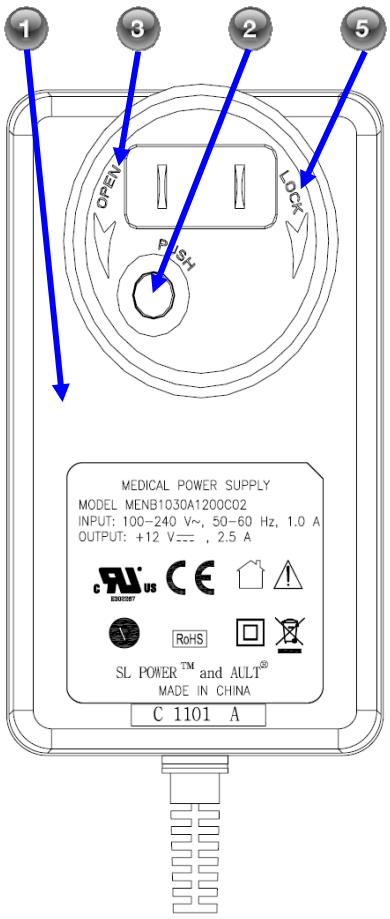
	Mode		DIP Switch					
Index	DVI Mode	SDI Mode	6	5	4	3	2	1
0	720x487/59.94P	720x480/59.94I	O	O	O	O	O	O
1	720x576/50.00P	720x576/50.00I	O	O	O	O	O	F
2	1280X720/23.98P	1280X720/23.98P	O	O	O	O	F	O
3	1280X720/24.00P	1280X720/24.00P	O	O	O	O	F	F
4	1280X720/25.00P	1280X720/25.00P	O	O	O	F	O	O
5	1280X720/29.97P	1280X720/29.97P	O	O	O	F	O	F
6	1280X720/30.00P	1280X720/30.00P	O	O	O	F	F	O
7	1280x720/50.00P	1280x720/50.00P	O	O	O	F	F	F
8	1280x720/59.94P	1280x720/59.94P	O	O	F	O	O	O
9	1280x720/60.00P	1280x720/60.00P	O	O	F	O	O	F
10	1920x1080/50.00P	1920x1080/50.00I	O	O	F	O	F	O
11	1920x1080/59.94P	1920x1080/59.94I	O	O	F	O	F	F
12	1920x1080/60.00P	1920x1080/60.00I	O	O	F	F	O	O
13	1920x1080/23.98P	1920x1080/23.98P	O	O	F	F	O	F
14	1920x1080/24.00P	1920x1080/24.00P	O	O	F	F	F	O
15	1920x1080/25.00P	1920x1080/25.00P	O	O	F	F	F	F
16	1920x1080/29.97P	1920x1080/29.97P	O	F	O	O	O	O
17	1920x1080/30.00P	1920x1080/30.00P	O	F	O	O	O	F
18	1920x1080/50.00P	1920x1080/50.00P	O	F	O	O	F	O
19	1920x1080/59.94P	1920x1080/59.94P	O	F	O	O	F	F
20	1920x1080/60.00P	1920x1080/60.00P	O	F	O	F	O	O
21	640x480/60 VGA	N/A	O	F	O	F	O	F
22	640x480/75 VGA	N/A	O	F	O	F	F	O
23	640x480/85.01 VGA	N/A	O	F	O	F	F	F
24	800x600/60.32 SVGA	N/A	O	F	F	O	O	O
25	800x600/75 SVGA	N/A	O	F	F	O	O	F
26	800x600/85.06 SVGA	N/A	O	F	F	O	F	O
27	1024x768/60 XGA	N/A	O	F	F	O	F	F
28	1024x768/75.03 XGA	N/A	O	F	F	F	O	O
29	1024x768/85 XGA	N/A	O	F	F	F	O	F
30	1152x864/70.01 XGA	N/A	O	F	F	F	F	O
31	1152x864/75 XGA	N/A	O	F	F	F	F	F
32	1152x864/85 XGA	N/A	F	O	O	O	O	O
33	1280x768/59.87 WXGA	N/A	F	O	O	O	O	F
34	1280x960/60 SXGA	N/A	F	O	O	O	F	O
35	1280x960/75 SXGA	N/A	F	O	O	O	F	F
36	1280x960/85 SXGA	N/A	F	O	O	F	O	O
37	1280x1024/60.02 SXGA	N/A	F	O	O	F	O	F
38	1280x1024/75.02 SXGA	N/A	F	O	O	F	F	O
39	1280x1024/85.02 SXGA	N/A	F	O	O	F	F	F
40	1360X768/60.01WXGA	N/A	F	O	F	O	O	O
41	1366X768/59.79 WXGA	N/A	F	O	F	O	O	F
42	1440X900/59.89 WXGA	N/A	F	O	F	O	F	O
43	1600X1200/60 UXGA	N/A	F	O	F	O	F	F
44	1680X1050/59.95 WSXGA	N/A	F	O	F	F	O	O
45	1920x1200/50 WUXGA	N/A	F	O	F	F	O	F
46	1920x1200/60 WUXGA	N/A	F	O	F	F	F	O
47	Use Menu	*	F	F	F	F	F	F

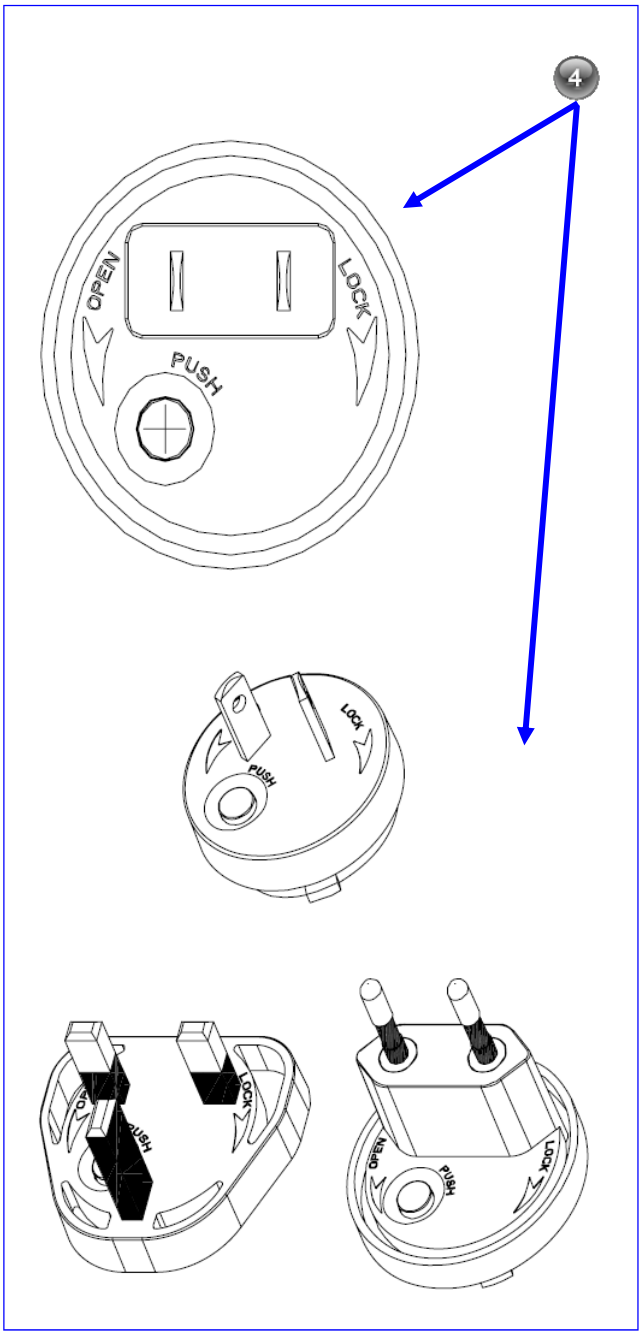
* **Note:** To set the output mode from the **ScaleOR**'s OSM, all switches must be set to **Off** .

Power Supply and Wall Adapters

The power supply is shown with the US wall adapter installed. To exchange the adapter, proceed as follows:

1. Place the power supply on your work surface as shown.
2. Press and hold the button labeled **PUSH**.
3. Twist the adapter 1/8 turn toward the **OPEN** arrow, and lift it off the power supply.
4. Select one of the provided wall adapters.
5. Align the tabs on the bottom of the adapter with the notches on the power supply and place the adapter on the power supply. Press the adapter down and twist it toward the **LOCK** arrow until it clicks into place.





Removable Input Modules

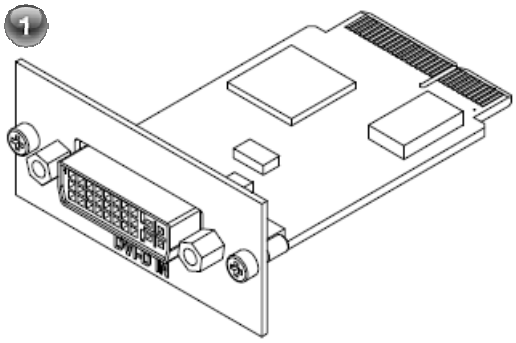
Input Modules:

Four types of input modules are available: DVI-D, 3G-SDI, VGA* and S-Video / Composite*

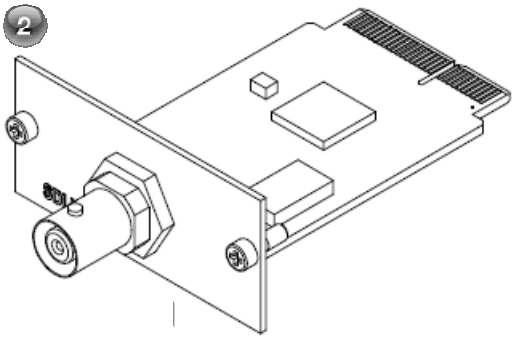
1. The DVI-D input module accepts DVI signals up to 1920 x 1200 progressive at 60Hz.
2. The 3G-SDI input module accepts SDI signals up to 1920 x 1080 progressive at 60Hz.
3. The VGA input module accepts VGA signals up to 1920 x 1200 progressive at 60Hz.
4. The S-Video / Composite input module accepts S-Video / Composite NTSC or PAL signals .

Any one of the input modules shown below may be installed in the card slot.

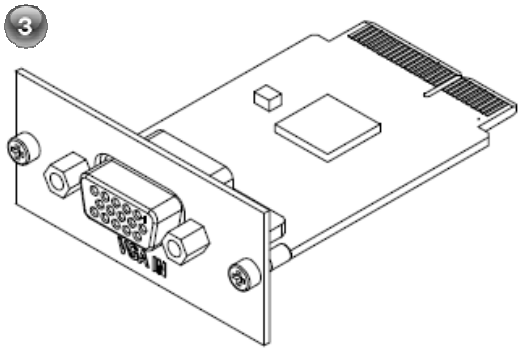
DVI-D



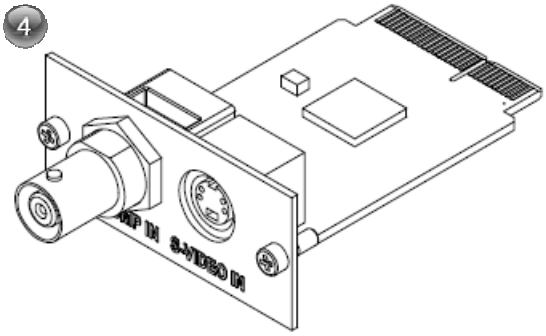
3G-SDI



VGA*



Composite / S-Video*



*The VGA and Composite / S-Video modules will be available at a future date.

Module Removal and Installation

⚠ The **ScaleOR** must be turned off prior to installing or replacing input or output modules.

Input Module Removal:

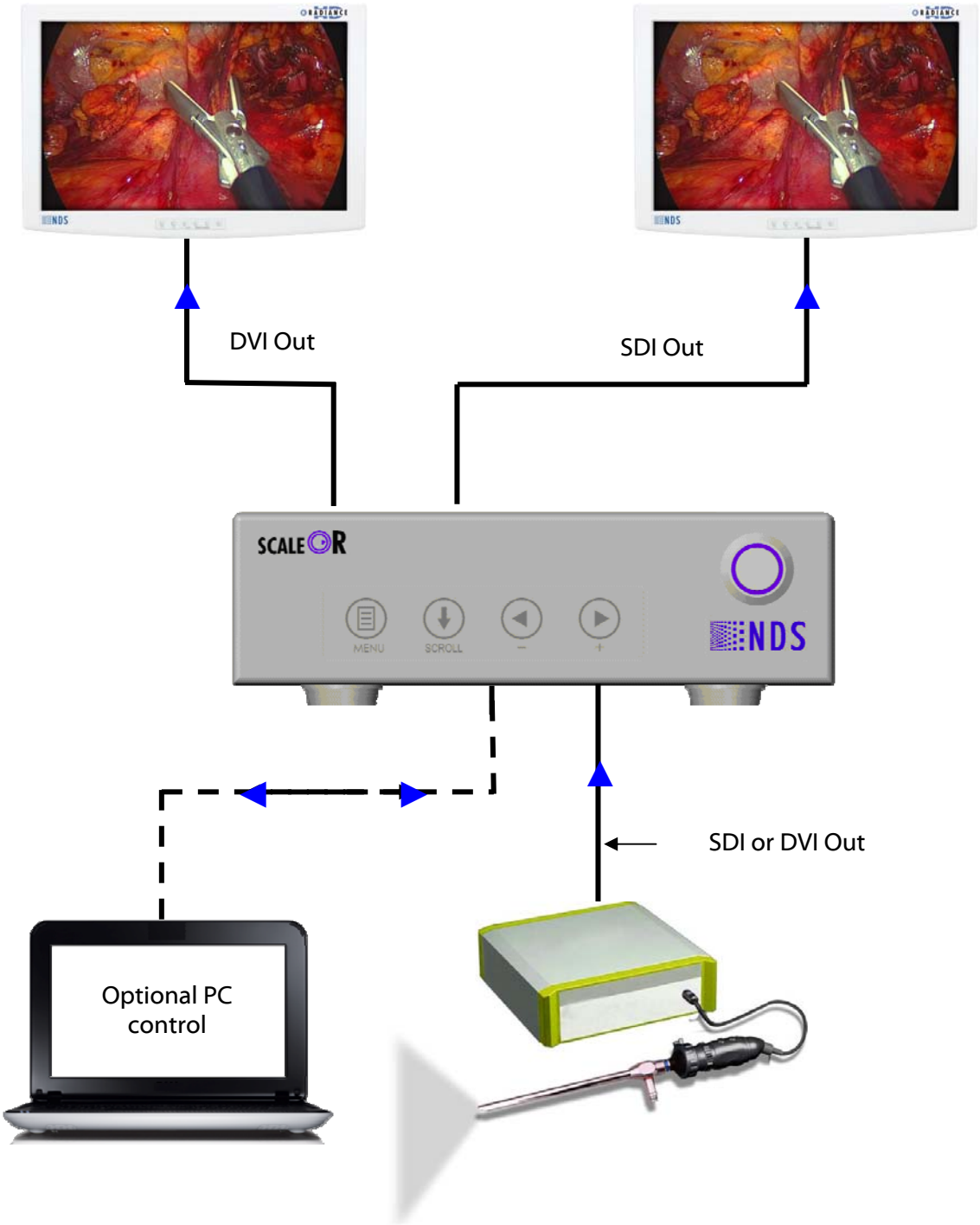
Use a number 1 Phillips screwdriver to loosen, but not remove, the screws located on the left and right sides of the module's mounting plate. When the screws are clear of the chassis, remove the module by gripping the screws and pulling the module out.

Installation:

Slide the new module into the chassis until it contacts the connector, then push gently until the module seats. The module is correctly seated when its mounting plate is flush with the chassis's back panel. Thread the module's screws into the chassis until they touch the mounting plate, then tighten each screw by turning it another quarter turn.

System Configuration Example

4



Startup

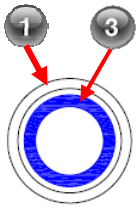
Connect one of the **ScaleOR**'s outputs to a compatible monitor. Connect a video source to the **ScaleOR**'s input.

1. Press the power button the **ScaleOR**'s front panel. The power button's illuminated blue ring flashes for 15 seconds then, if a video signal is detected, becomes steady. If a video signal is not detected the ring continues flashing.

2. The NDS logo is displayed on the monitor until the **ScaleOR**'s initialization is complete. At which time the illuminated ring stops flashing, if a video signal is detected, and becomes steady blue. At this time an image of the video signal connected to the **ScaleOR**'s input is displayed on the monitor.

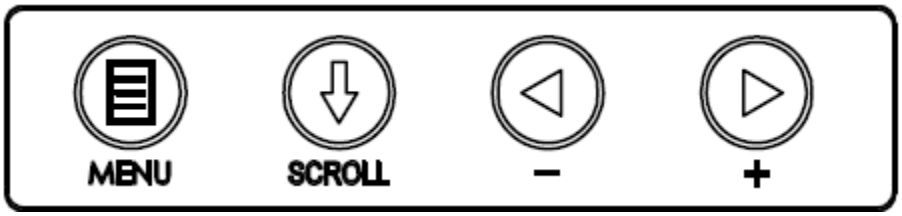
3. If the **ScaleOR** has been turned on for more than 15 seconds and a video signal is not detected the blue ring is will flash at the rate of 1 flash per second.

5



Control

A 4 button keypad, located below and to the right of the **ScaleOR** logo, allows the user to make adjustments to various **ScaleOR** parameters using the On Screen Menu (OSM) system.



6 Menu System Overview

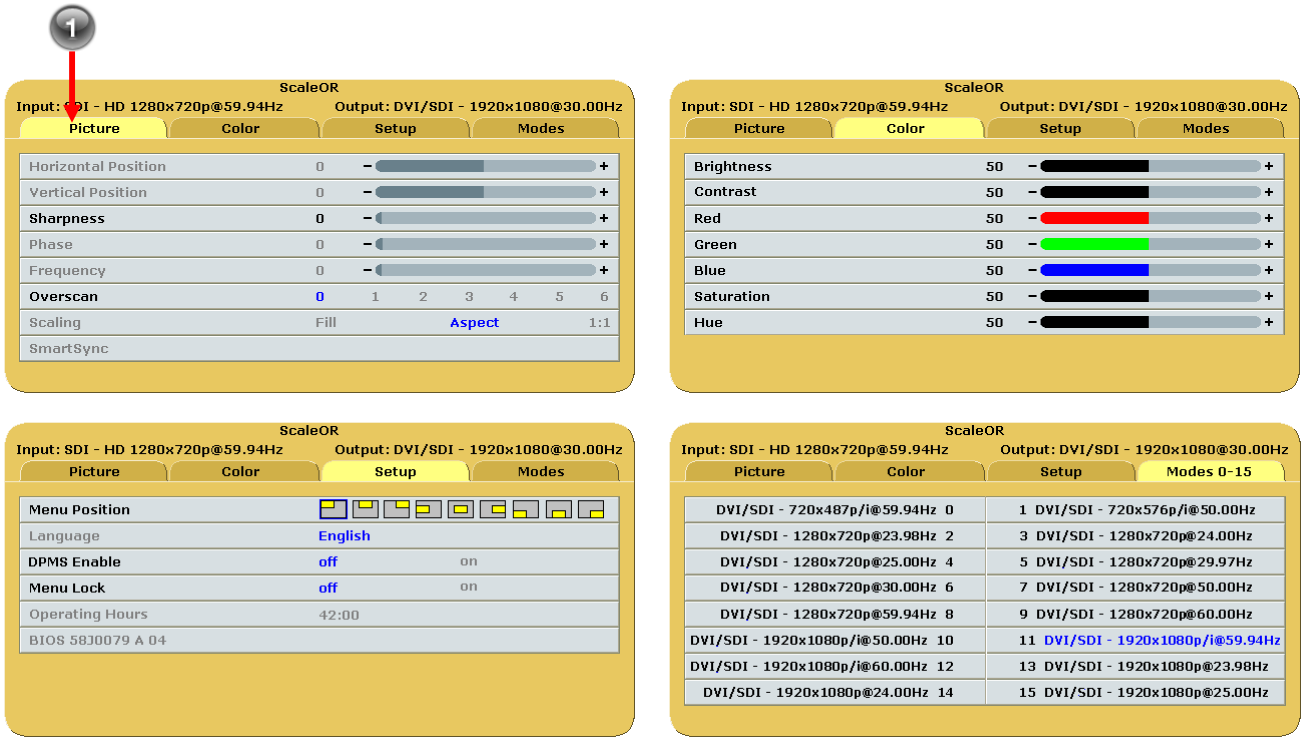
Press the **MENU** button once to open the OSM. The input and output resolution are shown at the top of the menu.

1 The Picture menu is displayed when the OSM is opened.

Press the ◄ or ► button to select the menu you want to work with, then press the **SCROLL** button to select the parameter. Press the ◄ or ► button to set the parameter to the desired value. Press the **MENU** button to save your changes and close the OSM.

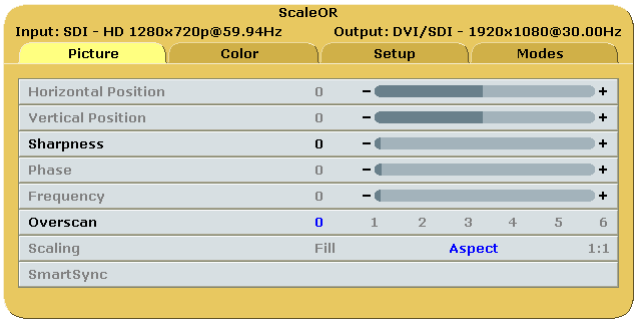
Notes:

1. All parameter names change to the language selected in the Setup menu.
2. Grayed out parameters are not currently accessible.



ScaleOR Setup

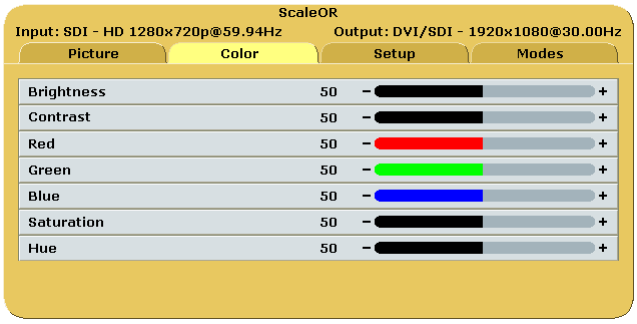
DVI and SDI Picture Menu



Sharpness:
Press ◄ or ► to adjust the sharpness (focus) of the displayed image.

Overscan:
0 = The image is displayed at a size that fills the screen without losing any video information. The image presented to the display may include black bars top and bottom or left and right.
1, 2, 3, 4, 5 or **6** = The image is linearly enlarged, while remaining centered, in incremental steps. As the image becomes larger video information will be lost from the top and bottom and / or left and right. Select using ◄ or ► buttons.

Color Menu



Brightness:
Press the ◄ or ► button to adjust brightness.

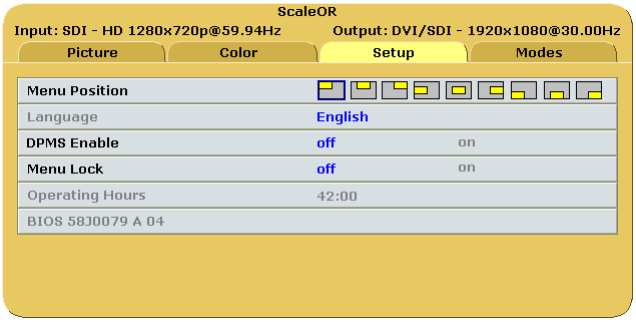
Contrast:
Press the ◄ or ► button to adjust contrast.

Red, Green, Blue:
Press the ◄ or ► button to increase or decrease the intensity of the selected color.

Saturation:
Press ◄ or ► to set the saturation (color intensity) of the image.

Hue:
Press ◄ or ► to set the hue (color tint) of the image.

Setup Menu



Menu Position:
Places the menu in 1 of 9 predefined screen positions. Press the ◄ or ► button to select any of the 9 screen positions.

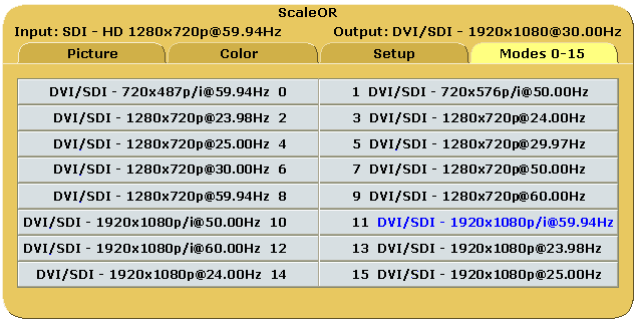
Language:
Currently Language is: English

DPMS Enable:
Display Power Management System. When DPMS is enabled (**on**), and no input signal is present, or the signal is removed, then, if the unit is connected to a monitor, the "ScaleOR D.P.M.S" message is displayed for 10 - 15 seconds. After which the **ScaleOR** goes into standby mode, and turns its outputs off. When an input signal is applied the **ScaleOR** comes out of standby and turns its outputs on. Press the ► button to enable DPMS, press the ◄ button to disable DPMS.

Menu Lock:
Disables access to menu system. This prevents inadvertent changes to the **ScaleOR**'s settings. To enable Menu Lock, press the ► button. MENU LOCKED is displayed when the ◄ button is pressed. To unlock, simultaneously press and hold the MENU and SCROLL buttons until MENU UNLOCKED is displayed.

Operating Hours: Shows the ScaleOR's hours of operation.
BIOS: Installed version of the ScaleOR's BIOS firmware.

Modes Menu



The available output modes are shown when the **Modes** tab is selected. If the **Modes** tab is selected using the ► button, the tab's legend changes to **Modes 0-15** and modes 0 through 15 are displayed. Pressing the ► button a second time, changes the tab's legend to **Modes 16-31** and modes 16 through 31 are displayed. If the ► button is pressed a third time the tab's legend changes to **Modes 32-47**, modes 32 through 46 are displayed. Mode 47 is not implemented and is shown as None. Finally, pressing the ► button a fourth time selects the **Picture** menu. When the ◄ button is used to select the **Modes** tab, the sequence described above occurs in reverse order. All available output modes are shown in the table on the following page.

Press the ► button to select the group of modes (**0-15**, **16-31** or **32-47**) that contains the output mode that you want to use.

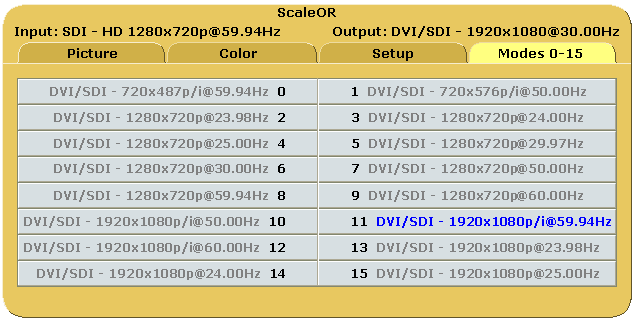
SCROLL Press the **SCROLL** button to highlight the pair of modes that contains the mode to be used. This message Press: ◄ Select Left, ► Select Right appears on the bottom of the OSM.

Press the ◄ or ► button to select the new output mode. The following message appears on bottom of the OSM. Press: Confirm, Cancel

MENU Press this button to confirm the new output mode. The following message is shown on the bottom of the OSM. New Output Format Confirmed If the **MENU** button is not pressed within **20** seconds the output mode reverts to the previous output mode.

SCROLL Press this button to cancel the new output mode. The following message is shown on the bottom of the OSM. New Output Format Cancelled

If the Modes menu appears as shown below, then one or more of the mode switches is turned **on**, and the Modes menu is locked. To use the Modes menu turn all of the mode switches **off**. See page 3 for the Output Mode Switches location.



Note: When the Modes menu is selected, the currently active mode is shown in blue, even if the menu is locked.

Output Modes Table

Mode Index	Input:	Mode	Mode Index	Input:	Mode	Mode Index	Input:	Mode
0000	DVI/SDI	720x487p/i@59Hz	0010	DVI/SDI	1920x1080p@29Hz	0020	DVI Only	1152x864@85Hz
0001	DVI/SDI	720x576p/i@50Hz	0011	DVI/SDI	1920x1080p@30Hz	0021	DVI Only	1280x768@59Hz
0002	DVI/SDI	1280x720p@23Hz	0012	DVI/SDI	1920x1080p@50Hz	0022	DVI Only	1280x960@60Hz
0003	DVI/SDI	1280x720p@24Hz	0013	DVI/SDI	1920x1080p@59Hz	0023	DVI Only	1280x960@75Hz
0004	DVI/SDI	1280x720p@25Hz	0014	DVI/SDI	1920x1080p@60Hz	0024	DVI Only	1280x960@85Hz
0005	DVI/SDI	1280x720p@29Hz	0015	DVI Only	640x480@60Hz	0025	DVI Only	1280x1024@60Hz
0006	DVI/SDI	1280x720p@30Hz	0016	DVI Only	640x480@75Hz	0026	DVI Only	1280x1024@75Hz
0007	DVI/SDI	1280x720p@50Hz	0017	DVI Only	640x480@85Hz	0027	DVI Only	1280x1024@85Hz
0008	DVI/SDI	1280x720p@59Hz	0018	DVI Only	800x600@60Hz	0028	DVI Only	1360x768@60Hz
0009	DVI/SDI	1280x720p@60Hz	0019	DVI Only	800x600@75Hz	0029	DVI Only	1366x768@59Hz
000A	DVI/SDI	1920x1080p/i@50Hz	001A	DVI Only	800x600@85Hz	002A	DVI Only	1440x900@59Hz
000B	DVI/SDI	1920x1080p/i@59Hz	001B	DVI Only	1024x768@60Hz	002B	DVI Only	1600x1200@60Hz
000C	DVI/SDI	1920x1080p/i@60Hz	001C	DVI Only	1024x768@75Hz	002C	DVI Only	1680x1050@59Hz
000D	DVI/SDI	1920x1080p@23Hz	001D	DVI Only	1024x768@85Hz	002D	DVI Only	1920x1200@50Hz
000E	DVI/SDI	1920x1080p@24Hz	001E	DVI Only	1152x864@70Hz	002E	DVI Only	1920x1200@60Hz
000F	DVI/SDI	1920x1080p@25Hz	001F	DVI Only	1152x864@75Hz	002F	N/A	None

***Note:** If a Mode contains "p/I" then the "p" (progressive scan) applies when the input signal is DVI and the "i" (interlaced scan) applies when the input signal is SDI. Modes that contain only a "p" are progressive whether the input is DVI or SDI. The DVI Only modes are always progressive.

Restoring Factory Defaults

To restore the Factory Defaults turn the ScaleOR off, press and hold the **MENU** button. While holding the **MENU** button, turn the unit on. After approximately 10 seconds the "Restoring Factory Defaults" message appears on the monitor connected to the ScaleOR.

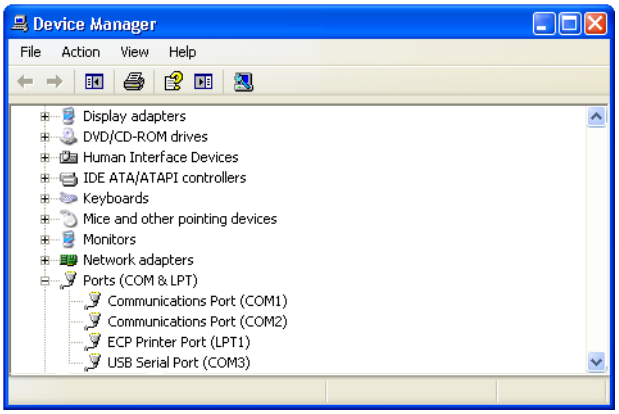
Serial Port Setup and Test

Hardware Setup

Turn the **ScaleOR** on. Connect your PC to the **ScaleOR** using a USB to Mini 5 USB (NDS P/N 35Z0047) or equivalent cable.

Device Manager

Open the PC's Device Manager, and select Ports (COM & LPT). Find the USB Serial Port (COMx) entry. Use the port number in the ( ) when you setup Hyper Terminal.



Hyper Terminal Setup

The table at the bottom of this page shows the serial port parameters.

Click Start

Select All Programs > Accessories > Communications

Click Hyper Terminal

Enter a name for the new connection and click OK.

In the **Connect To** menu, select the COM port number that matches the USB Serial Port you found using the Device Manager from the **Connect Using** drop down menu and click OK.

In the **COM Properties** menu:

- Set Bits per second to 19200
- Set Data bits to 8
- Set Parity to None
- Set Stop bits to 1
- Set Flow control to None
- Click OK

Parameter	Setting
Baud Rate	19200
Parity	None
Data Bits	8
Stop Bits	1
Flow Control	None

Click File, click Properties, then select ASCII Setup from the Properties menu

In the ASCII Setup menu select:

- Echo typed characters locally.
- Click OK to exit ASCII Setup

Click OK to exit configuration. Click File and select Save to save the configuration.

Serial Port Test

Place the cursor in the text area of the Hyper Terminal window and press Enter, **!0003C3** is displayed.

Type **:0000000080** and press Enter.

!000058J0079RBBxx is displayed. Where:

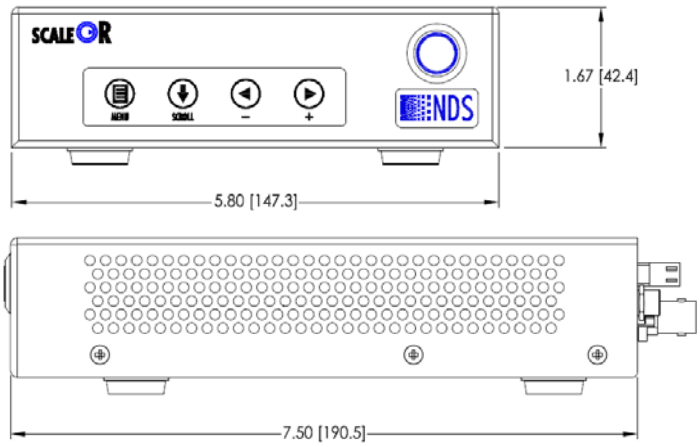
- ! = Start of response.
- 0000 = Response OK.
- 58J = BIOS type.
- 0079 = BIOS number.
- R = Revision letter.
- BB = Build number (minor revision).
- xx = Checksum

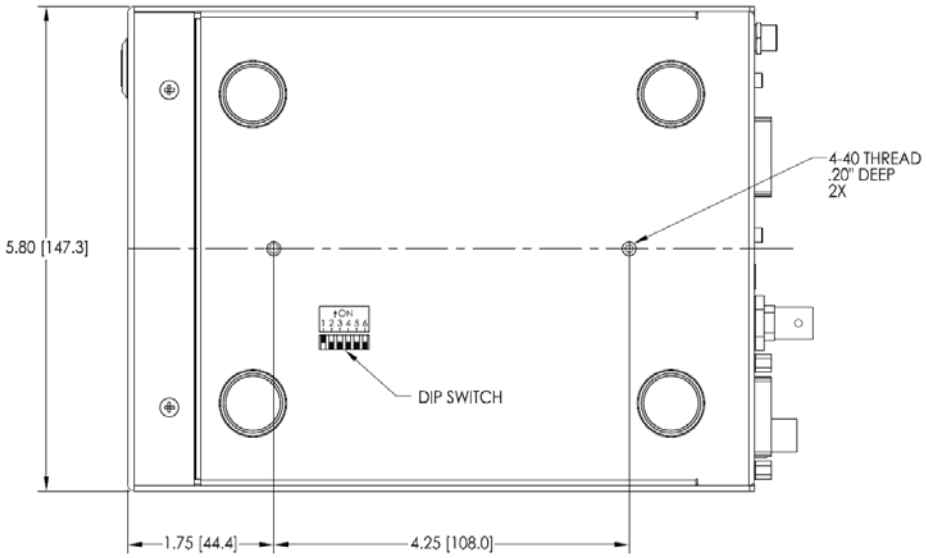
A complete set of **ScaleOR** serial commands is available. See the General Information section on page 2.

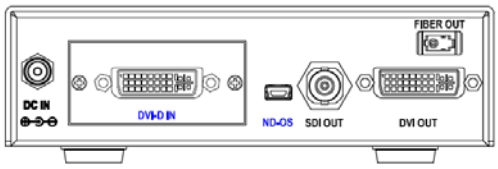
Troubleshooting and Test Section

Problem	Possible Causes and Remedies
Power switch does not illuminate in the **ON** state	Loose power cable: Verify that the power cable is fully inserted into the unit's power connector and that the power supply's connector collar is properly threaded onto the **ScaleOR**'s power connector. Wall Socket: Some wall sockets have on / off switches built in. If the socket you are using has a built in switch, verify that is in the on position.
Confidence test	Turn the **ScaleOR** off, then connect its DVI output port to a powered up monitor. Turn the ScaleOR on, the **NDS** logo should appear on the monitor approximately 10 seconds after the ScaleOR is turned on. Turn the **ScaleOR** off, then connect its SDI output port to the monitor and repeat the test. If your **ScaleOR** has a Fiber Optic output, turn the **ScaleOR** off, then connect its fiber Optic output port to the monitor and repeat the test.
Video is not displayed	If the **ScaleOR**'s power button's blue ring is flashing once per second, then the unit is not detecting a video signal. Verify that an input signal is connected to the unit's input. If there is a connection try replacing the video cable. If video appears, then the cable is bad. If video does not appear, then connect the unit to a different video source. If video appears, then the previous video source is turned off, or defective. If video still does not appear, then the **ScaleOR**'s Input module may be defective, or not properly seated. Try reseating the input module. If that doesn't clear the problem then the input module is defective. If you determine that the input module is defective, please contact customer service for assistance.
Video is not displayed from a given output port	Verify that video is displayed from the DVI or SDI output port. If video from the DVI port is displayed, and not from the SDI port then ScaleOR's output mode may set to a DVI only mode (see Output Modes Table on page 12), the cable connecting the SDI port to a monitor may be bad or the SDI output is defective. If video from the SDI port is displayed, and not from the DVI port then the cable from the DVI port may be bad, or the DVI port is defective. If you determine that one of the output ports is defective, please contact customer service for assistance.

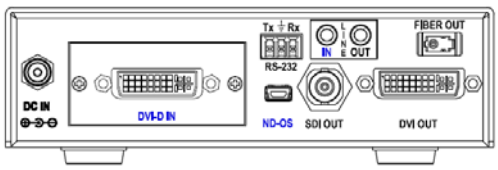
Drawing and Dimensions







No Audio Option

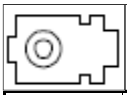


AUDIO OPTION

Audio Option
This feature will be available on future releases

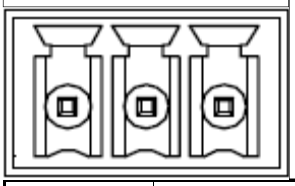
9

Connectors and Pin Outs



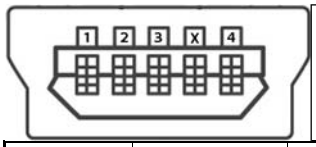
Fiber Optic Output

Pin	Name	Description
Input	Input	Serial Video Data



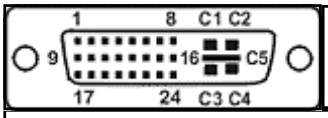
RS-232 Serial Connector
(Audio Option only)

Pin	Name	Description
1	TXD	Data Transmit
2	GND	Data Ground
3	RXD	Data Receive



USB Connector

Pin	Name	Description
1	VCC	+5 VDC
2	D-	Data -
3	D+	Data +
X	ID	N/C
4	GND	Ground



DVI-D*
Digital only.

* Compliant with DVI 1.0

PIN#	SIGNAL	PIN#	SIGNAL
1	T.M.D.S. DATA 2-	**16**	HOT PLUG DETECT
2	T.M.D.S. DATA 2+	**17**	T.M.D.S. DATA 0-
3	T.M.D.S. DATA 2/4 SHIELD	**18**	T.M.D.S. DATA 0+
4	T.M.D.S. DATA 4-	**19**	T.M.D.S. DATA 0/5 SHIELD
5	T.M.D.S. DATA 4+	**20**	T.M.D.S. DATA 5-
6	DDC CLOCK	**21**	T.M.D.S. DATA 5+
7	DDC DATA	**22**	T.M.D.S. CLOCK SHIELD
8		**23**	T.M.D.S. CLOCK+
9	T.M.D.S. DATA 1-	**24**	T.M.D.S. CLOCK-
10	T.M.D.S. DATA 1+		
11	T.M.D.S. DATA 1/3 SHIELD		
12	T.M.D.S. DATA 3-		
13	T.M.D.S. DATA 3+		
14	+5V POWER		
15	GND		

Cable Bend Radius

We recommend that the bend radius of metallic cables be no less than 2.5 inches (63 mm) or 7 times the diameter of the cable whichever is greater. The bend radius of Fiber Optic cables should be no less than 10 times the diameter of the cable. Sharper bends may damage the cable and / or degrade the video signal.

Specifications[1]

DVI and Fiber Output Resolution	User selectable. See Output Modes Table on page 12
SDI Output Resolution	User selectable. See Output Modes Table on page 12
HD-SDI Input signal level	.8 to 2.0 V p-p
DC Power Consumption	22W
AC Power Consumption	30W
System Weight	1.3lbs (0.59 kg)
Environmental	
Operating Temperature	+32 to 95^{0}F (0 to 35^{0}C)
Operating Humidity	20 to 85% RH
Storage Temperature	-4 to +122^{0}F (-20 to +50^{0}C)
Storage Humidity	5 to 85% RH

Notes:

1. Specifications are subject to change without notice. Contact NDS for recent specifications.

Video and Graphics Inputs	Connector Type
Input Modules	
S-video	DIN-4
Composite	BNC, 75 Ohm terminated
VGA/ RGBS / YPbPr	HD-15
DVI	DVI -D
3G-SDI	BNC, 75 Ohm terminated
Outputs	
DVI Output Module	DVI-D
SDI Output Module	BNC
Fiber Output Module	LC

Video Formats	Horiz. Freq (kHz)	Interlaced / Progressive	Aspect Ratio	Standard Digital/Analog
Serial Digital and Analog				
576/50i (PAL) SDI, Comp, S-video, RGBS, YPbPr	15.625	Interlaced	4:3	SMPTE 259M, C ITU 601
480/60i (NTSC) SDI, Comp, S-video, RGBS, YPbPr	15.734	Interlaced	4:3	SMPTE 259M, C ITU 601
576/50p RGBS, YPbPr, SOG, DVI	31.250	Progressive	4:3	ITU-R-BT1358
480/60p RGBS, YPbPr, SOG, DVI	31.469	Progressive	4:3	SMPTE 293M
720/50p RGBS, YPbPr, DVI, HD-SDI	37.500	Progressive	16:9	SMPTE 292M, SMPTE 296M
720/60p RGBS, YPbPr, DVI, HD-SDI	45.000	Progressive	16:9	SMPTE 292M, SMPTE 296M
1080/50i RGBS, YPbPr, DVI, HD-SDI	28.125	Interlaced	16:9	SMPTE 292M, SMPTE 274M
1080/60i RGBS, YPbPr, DVI, HD-SDI	33.750	Interlaced	16:9	SMPTE 292M, SMPTE 274M
1080/50p DVI, HD-SDI	56.200	Progressive	16:9	SMPTE 274M
1080/60p DVI, HD-SDI	67.300	Progressive	16:9	SMPTE 274M

Cleaning Instructions

Turn the unit off prior to cleaning.

Periodic cleaning of the **ScaleOR**'s enclosure using a dry soft cloth to prevent dust from clogging the vent holes is recommended.

The front surface of the device can be damaged using excessive scrubbing and or incompatible cleaning solvents. NDSSI recommends using distilled de-ionized water to slightly dampen a clean soft lint free cloth. For organic contaminants sparingly use a 50-70% IPA (isopropyl alcohol) solution. Never use acetone, as it can damage the enclosure paint and void the manufacturer's warranty. Consult cleanser manufacturer to see if agent used is compatible with plastics. Do not allow liquid to enter the unit.

Acceptable Cleaning Materials are:
Isopropyl alcohol

Do not use:
MEK (Methyl Ethyl Ketone)
Toluene
Acetone

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60G0453

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